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THE ASSOCIATION OF AMERICAN GEOGRAPHERS

THE eighth annual meeting of the association was held in Washington, December 28-30, 1911. Through the kindness of the National Geographic Society, the sessions were held in Hubbard Memorial Hall, and luncheon was provided for those in attendance.

The president, Professor Ralph S. Tarr, of Cornell University, presided, and gave the president's address. His subject was "The Glaciers and Glaciation of Alaska." Professor Martin read a memorial of Professor Christopher Webber Hall, who died on May 10, 1911. In addition to these addresses, thirty-six papers were read by members and by several others on invitation. Paper on subjects in meteorology were more numerous than at any previous meeting of the association.

On Friday evening the association met with the Geological Society of America to hear the address of its president, Professor W. M. Davis, upon the subject "The Relations of Geology and Geography." This was followed by a smoker given to both societies at the Cosmos Club by the Geological Society of Washington.

The first volume of the *Annals* of the association is now in press and will appear during the winter under the editorship of Professor R. E. Dodge. Announcement was made of the election of the following officers for the year 1912: *President*, Rollin D. Salisbury; *First Vice-president*, Marius R. Campbell; *Second Vice-president*, Isaiah Bowman; *Secretary*, Albert Perry Brigham; *Treasurer*, Nevin M. Fenneman; *Councillor for three years*, Lawrence Martin. The next annual meeting will be held in New Haven.

ALBERT PERRY BRIGHAM,
Secretary

THE SOCIETY OF AMERICAN BACTERIOLOGISTS

At the Washington meeting of the society from December 27-29, the following papers were presented:

Biochemical Problems in Bacteriology (president's address): F. P. GORHAM.

This address will appear in SCIENCE.

The Classification of the Streptococci by their Action upon Carbohydrate Media: C.-E. A. WINSLOW.

When Gordon first suggested the use of carbohydrate media for differentiating streptococci, it

seemed that this long-mooted problem was at last likely to be solved. The work of the last five years has, however, left matters in almost as confused a condition as ever, since different observers obtain such varied, and in some cases, conflicting results.

The author attempts to review in this paper the results of four recent American investigations, including 302 fecal streptococci, studied by Winslow and Palmer, 101 milk streptococci studied by Broadhurst, 65 throat cultures studied by Hilliard and 17 cultures from various sources examined by Bellinger, of Meadville College.

In all these cases the amount of acidity produced was determined by titration. The first point brought out is that the dividing line between fermenting and non-fermenting strains lies at about 1.2 per cent. acidity. The English results obtained by Gordon and Houston have been obtained by the use of litmus without titration, and if their solutions were not exactly neutral at the start, they must have classified as fermenting many organisms which really belong to the non-fermenting class. A careful comparison of the English results for particular groups shows, indeed, that they include a much greater percentage of positive records than the American ones.

Experience seems to indicate that systematic studies of the carbohydrate relations of the streptococci should be carried out by titration with phenolphthalein as an indicator. Media may be made up from meat extract (each batch checked by controls inoculated with *B. coli*) and adjusted to an initial reaction between neutral and .5 per cent. acid. Dextrose, lactose, saccharose, salicin, inulin, mannite and raffinose should all be used for diagnosis for the present at least, and titration may be made after cultivation for three days at 37° C.

When studied in this way, cultures producing over 1.2 per cent. acidity more than that initially recorded being considered positive, the media are acted upon (with occasional exception) in accordance with a definite order of fermentability, which is quite different from the order which prevails in the colon group. If only one carbohydrate is attacked that one is usually dextrose. Lactose and saccharose come next and particularly with fecal streptococci. Salicin is almost as commonly acted upon. Mannite is rarely attacked except by streptococci from milk and human feces, while raffinose is rarely attacked except by organisms from bovine feces. Inulin fermenters occur only abun-